# 16th International Conference on Fluidized Bed Combustion - Technical Program Schedule

Pavilion E

8:30 - 10:00 a.m.

Monday

101 Plenary Session

Donald Bonk, U. S. Department of Energy Donald Geiling, U. S. Department of Energy

FBC01-0208 Keynote Address
FBC01-0209 DOE Perspective

**FBC01-0211** *Awards* 

**201** CIBO Operations Panel Pavilion B Monday 10:30 a.m. - noon

Gary Merritt, Inter-Power/AhlCon Partners L.P.

**FBC01-0212** Panelists for CIBO Operations Panel

**202** CIBO Owners' Meeting - Closed Pavilion B Monday 1:30 - 5:00 p.m.

Gerald Gatti, Tractebel Power, Inc. Michael Hawkins, Mt. Poso Cogeneration Co.

**FBC01-0226** *CIBO Owners' Meeting Papers* 

**203** CIBO Owners Meeting Report Pavilion B Tuesday 10:30 a.m. - noon

Gerald Gatti, Tractebel Power, Inc.

Michael Hawkins, Mt. Poso Cogeneration Co.

**FBC01-0207** Atmospheric Fluidized Bed Combustion (AFBC) Benchmarks: A Perspective

301 Fundamentals: Modeling I Pavilion C Monday 10:30 a.m. - noon

Cor van den Bleek, Delft University of Technology

Nevin Selcuk, Middle East Technical University

**FBC01-0036** Dynamic Modeling of a 250 MWe CFB Boiler

**FBC01-0056** Dynamic Modeling for Simulation of 410 t/h Pyroflow CFB Boiler

302 Fundamentals: Modeling II Pavilion B Tuesday 3:30 - 5:00 p.m.

Ben Anthony, CANMET Energy Technology Centre Changsui Zhao, Southeast University, China

**FBC01-0116** Combustion Modelling in Fluidized Beds: A Look at the Fundamentals

**FBC01-0134** *Modeling of a Bubbling AFBC with Volatiles Release* 

303 **Fundamentals: Modeling III** Pavilion C Wednesda 10:30 a.m. - noon Piero Salatino, Universita di Napoli Nevin Selcuk, Middle East Technical University FBC01-0059 Dynamic Modeling of a 60 t/h Pressurized Fluidized Bed Combustor A State Estimation of the Standpipe of a Circulating Fluidized Bed using an FBC01-0153 Extended Kalman Filter Mathematical Modeling of Tonghae Circulating Fluidized Bed Combustor (200 FBC01-0190 MWe) Development of Second Order Two-Fluid Modelling for Gas-Solid Fluidization FBC01-0193 304 **Fundamentals: Combustion I** Pavilion C Monday 1:30 - 3:00 p.m. Fernando Preto, CANMET Energy Technology Centre Larry Lawson, U. S. Department of Energy FBC01-0025 Solids Circulation Rate and Gas Bypassing in Pressurized Spout-Fluid Bed With a Draft Tube FBC01-0064 Investigation of Carbon Loss in CFB Boilers Burning Hard Coals Investigation of Unburned Carbon on the Structure of Residual Ash FBC01-0088 Trace Element Behavior When Co-Firing Coal, Straw, and Paper Sludge Under FBC01-0122 **Bubbling Fludized Bed Conditions** 

Pavilion C

Monday

3:30 - 5:00 p.m.

Particle-Wall Shear Stress Measurements Within the Standpipe of Circulating

FBC01-0111 Determination of Biomass Char Combustion Reactivities
 FBC01-0129 Melting of Ash Components When Co-Firing Coal, Straw, and Paper Sludge Under Bubbling Fluidized Bed Conditions
 FBC01-0196 About an On-Line Calorific Value Sensor and System Identification Techniques to Improve the Control System of Combustion Processes
 FBC01-0215 Validation of a Single Particle Model for Char Carbon and Char Nitrogen Oxidation Under Fluidized Bed Combustion Conditions

FBC01-0151

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Fluid Bed

**Fundamentals: Combustion II** 

Larry Lawson, U. S. Department of Energy

306 **Fundamentals: Sorbent Performance** Pavilion D Tuesday 3:30 - 5:00 p.m. Andres Cabanillas, CIEMAT Juan Carlos Abadanes, Instituto de Carboquimica (Spain) FBC01-0057 Absorption of HCI and HF by Ca-Based Sorbents at FBC Conditions FBC01-0125 The Sulphation Reaction of Limestone Particles Over a Time Scale of Weeks FBC01-0145 The Long-Term Sulfation Behavior of Limestone and Dolomitic Sorbents in CFBC Boilers FBC01-0173 Prediction of Sorbent Performance Performance in a CFB Boiler Based on Sorbent Petrographic Properties 308 Fundamentals: Heat Transfer/Hydrodynamics Pavilion B Wednesda 8:30 - 10:00 a.m. Changsui Zhao, Southeast University, China An Evaluation of In-Bed Heat Transfer Data from Large-Scale Bubbling FBC01-0038 Atmospheric Fluidized-Bed Combustors One Dimensional Numerical Simulation of Coal Gasification in an Industrial FBC01-0063 Jetting Fluidized Bed Gasifier FBC01-0074 Analysis of the Heat Transfer Mechanism in High Temperature Circulating Fluidized Beds by a Numerical Model 309 **Fundamentals: Fuel Characterization** Pavilion C Wednesda 8:30 - 10:00 a.m. Alan Scaroni, The Pennsylvania State University In-Bed Char Combustion of Australian Black Coals in Pressurized Fluidized FBC01-0023 **Bed Combustion** FBC01-0078 Assessment of Ash Inventory and Size Distribution in Fluidized Bed Coal Combustors The Effect of Fuel Properties on the Bottom Ash Generation Rate by a FBC01-0174 Laboratory Fluidized Bed Combustor

Pavilion B

Larry Shadle, U. S. Department of Energy

Tuesday

1:30 - 3:00 p.m.

**Fundamentals: Nitrogen Oxides** 

Sarma Pisupati, The Pennsylvania State University

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NOx and N2O Formation Mechanisms - A Detailed Chemical Kinetic Modeling FBC01-0068 Study on a Single Fuel Particle in a Stationary Fluidized Bed FBC01-0079 Towards a Quantitative Understanding of NOx and N20 Emission Formation in Full-Scale Circulating Fluidised Bed Combustors Study on Control of NOx and N2O in a Coal-Fired Fluidized Bed Test Rig FBC01-0162 401 **Gasification I** Pavilion D Monday 10:30 a.m. - noon Archie Robertson, Foster Wheeler Joe Mei, U. S. Department of Energy FBC01-0051 Demonstration of an Intermittent Circulating Fluidized Bed Gasification Process for Industrial Application FBC01-0082 Design of a 12 MW Tri-Cogeneration System of Gas, Heat and Power FBC01-0163 Repowering Lignited Fueled Boiler Plant for High Efficiency 402 **Gasification II** Pavilion D 1:30 - 3:00 p.m. Monday Doug Hajicek, University of North Dakota Pete Smith, Kellogg Brown & Root FBC01-0011 Investigation Into Coal Gasification in an Industrial Jetting Fluidized Bed Gasifier FBC01-0065 Initial Operation of the PSDF Transport Gasifier Development of Pressurized Internally Circulating Fluidized-Bed Gasification FBC01-0105 **Technology** Advanced High-Temperature, High-Pressure Transport Reactor Gasification FBC01-0217 403 **Gasification III** Pavilion B Wednesda 10:30 a.m. - noon Archie Robertson, Foster Wheeler Pete Smith, Kellogg Brown & Root FBC01-0031 Repowering Options: Retrofit of Coal-Fired Power Boilers using Fluidized Bed Biomass Gasification FBC01-0085 Research on Flash Pyrolysis of Biomass for Bio-Oil in a Fluidized Bed Reactor FBC01-0143 Pyrolosis of Ployethylene in a Fluidized Bed Reactor FBC01-0182 The Conversion of Fuel Nitrogen in a Biomass-Fueled Pressurized Fluidized

Bed Gasification System

<u>501</u>	<b>Enviror</b>	nmental: Emissions I	Pavilion D	Monday	3:30 - 5:00 p.m.
	John Byam		PG&E National Energy Group		
FBC01-0013		Control of Acid Gas Emissions from Small to Medium/Me	edium Sized Sources		
FBC01-0016		The Effect of Fuel Characterization on Nitrogen Compou Pilot Fluidized Bed Combustion System	ınds Emissions in a		
FBC01-0033		Experimental and Mechanism Studies on a Pilot-Scale C Bed for Flue Gas Desulfurization	Circulating Fluidized		
FBC0	1-0119	Design Considerations of the 2x150 MW Formosa Heavy Boiler and NID System	Industry Corp. CFB		
<u>502</u>	<b>Enviror</b>	nmental: Emissions II	Pavilion D	Tuesday	8:30 - 10:00 a.m.
	Ann Kim, U	,	oanillas, CIEMAT		
FBC0	1-0003	Emissions of N2O and NOx from Char Combustion in a F	<sup>7</sup> luidized Bed		
FBC01-0049		Effective Nox Reduction With Air Staging, Experiences From a Biomass BFB			
FBC0	1-0090	Effect of Season on NOx Emission From Commercial Was Circulating Fludized Bed Boilers	ste Coal-Fired		
FBC0	1-0156	Wastes From the Combustion of Fossil Fuels: Research F Regulatory Determination	Prospectives on the		
<u>503</u>		nmental: Ash Management & Use I	Pavilion C	Tuesday	8:30 - 10:00 a.m.
FBC0	1-0058	ng, Foster Wheeler Corp. , Solidification of Fly Ash From Pressurized Fluidized Bed by Hydrothermal Technology	1 Combustion System		
FBC0	1-0086	Utilization of FBC Ashes			
FBC0	1-0157	Ash Hydration - An Inexpensive Method to Reduce Limes	stone Consumption		
<u>504</u>		nmental: Ash Management & Use II	Pavilion C	Tuesday	1:30 - 3:00 p.m.
Ben Antho FBC01-0146		ny, CANMET Energy Technology Centre , Release of Metals from FBC Ash: A Comparison of PC an	nd FBC Ash		

**FBC01-0147** Combining of FBC Fly Ash and Florida Phosphate Slimes for Use as a Soil

Amendment

Ann Kim, U. S. Department of Energy

**FBC01-0199** Coal Composition Effects on Re-Use Options for Circulating Pressurized

Fluidized Bed Combustion Ash

# **Environmental: Air Toxics**

Pavilion D Wednesda 8:30 - 10:00 a.m.

Sarma Pisupati, The Pennsylvania State University

**FBC01-0018** *Mercury Performance in FBC Systems Firing High Chlorine Coals* 

FBC01-0019 PAH Emissions From a Pilot Fluidized Bed Combustion System

**FBC01-0130** Reburning of Pelletized Fly Ash in Fluidized Bed Incinerator for Dioxin

Decomposition and Ash Disposal

## 601 AFBC: Design & Cost Studies I

Southern Pacific CD

Tuesday 8:30 - 10:00 a.m.

John Mustonen, Stone & Webster Engineering Co. Harvey Goldstein, Parsons Corp.

**FBC01-0008** *Utilization of High-Sulphur Coals in CFB* 

**FBC01-0100** Experience With Fuels From Biomass to Petroleum Coke, and How Their

Properties Affect Fluidized Bed Boiler Plant Design

**FBC01-0171** Development of Ultra Large CFB Boilers

FBC01-0195 USITESC Mine Mount CFB Plant in Santa Catarina State, Brazil

## 602 AFBC: Design & Cost Studies II

Southern Pacific CD

Tuesday 1:30 - 3:00 p.m.

Jim McClung, Foster Wheeler Corp. Richard Skowyra, ALSTOM **FBC01-0001** The Design and Experiment of 25 t/h Double Circulating Fluidized Bed Boiler

**FBC01-0006** Firing Coal Washing Wastes in a FI CIRC Steam Generator Redbank Power

Project

FBC01-0091 Babcock & Wilcox CFB Boilers - Design & Experience

**FBC01-0104** Further Studies Into the Designs of Supercritical Pressure Circulating

Fluidized Bed Boilers

604 AFBC: Operations Pavilion C Tuesday 3:30 - 5:00 p.m.

Kay Heinschel, Air Products and Chemicals, Inc. Phil Jones, PG&E National Energy Group

**FBC01-0106** Experiences on the Use of Circulating Fluidized Bed Technology Considering

Modern Emission Regulations in China

**FBC01-0144** Ammonia Injection System Retrofit at Scrubgrass

**FBC01-0154** Operating Experience of Foster Wheeler Waste-Coal Fired CFB Boilers

605 AFBC: Repowering Southern Pacific CD Wednesda 10:30 a.m. - noon

Nelson Rekos, U. S. Department of Energy Richard Skowyra, ALSTOM

FBC01-0002 Retrofitting 35 t/h Pulverized Coal Fired Boiler Into Circulating Fluidized Bed

Boiler

**FBC01-0076** Revamping Technology of Aged Boilers at Zhejiang University

**606 AFBC: Technical Advances** Southern Pacific CD Wednesda 8:30 - 10:00 a.m.

John Mustonen, Stone & Webster Engineering Co. Fred Glaser, U. S. Department of Energy

**FBC01-0099** Foster Wheeler Compact CFB Boilers for Utility Scale

**FBC01-0180** Debottlenecking of Fluidized Bed Furnace for Sewage Sludge Incineration by

Oxygen

FBC01-0213 Combustion of Victorian and South Australian High Moisture Lignites in a

Circulating Fluidised Bed Combustion Pilot Plant

**FBC01-0216** Modern CFB Concept for Combustion of Recovered Fuels: Design for

Improved Availability

607 AFBC: Case Studies Southern Pacific AGB Tuesday 3:30 - 5:00 p.m.

George Pukanic, U. S. Department of Energy Harvey Goldstein, Parsons Corp.

**FBC01-0060** The Experimental Investigation on the Coal Ash Formation in CFB Combustion

**FBC01-0123** Strategic Considerations in Limestone Sourcing and Processing for Use in a

**CFBB** 

**FBC01-0169** Difficult to Burn Fuels in Mid-Size to Large CFB Applications - Latest

Experience and Outlook

**FBC01-0177** Start-Up and Initial Operating Experiences at the Coke Fired Petropower

Cogeneration Facility

608 AFBC: Commercial/Demo Plants Pavilion D Tuesday 10:30 a.m. - noon

Nelson Rekos, U. S. Department of Energy Richard Skowyra, ALSTOM

**FBC01-0007** An Update of The Kladno Project: First IPP in the Czech Republic

**FBC01-0124** 2 x 230 MW HYBRID-Units at Map Ta Phut, Thailand, With Integration of

AFBCs in a Cost-Effective Solution for Combined Steam and Power Production

**FBC01-0135** Performance Test Data From the First 23 MWt ABFB Boiler in Turkey

**FBC01-0220** The JEA Northside Repowering CFB Combustion Demonstration Project: An

*Update* 

#### 701 Sustainable Fuels: Refinery Waste Fuels I

Pavilion C

Tuesday 10:30 a.m. - noon

Michael Rutkowski, Parsons Corp. Michael DeLallo, Parsons Corp.

**FBC01-0009** Economics and Design Considerations of Firing Petroleum Coke in a CFB

**FBC01-0067** Environmental, Thermal and Hydrodynamic Influence of the Fuel Composition

in the CFB Plant of SOMEDITH (60 MWth)

**FBC01-0093** The Fluidized Bed Combustion of Heavy Liquid Fuels

## **Sustainable Fuels: Refinery Waste Fuels II**

Southern Pacific AGB

Wednesda 10:30 a.m. - noon

Michael Rutkowski, Parsons Corp. Harvey Goldstein, Parsons Corp. **FBC01-0094** Simultaneous Reduction of Nox Emission and Unburnt Hydrocarbon Emission

During Plastic Incineration in Fluidized Bed Combustor

**FBC01-0152** *Combustion of Liquid Refinery Residues in a Circulating Fluidized Bed:* 

Experimental Investigations on the Combustion Characteristics and the

Pollutant Formation

FBC01-0178 A Study on Bubbling Bed Combustion of Gasoil

FBC01-0185 Combustion Characteristics of Refinery Residues in Circulating Fluidized Beds

and Their By Products

<u>703</u>	Sustain	able Fuels: Waste Fuel Fundamentals I	Southern Pacific CD	Monday	10:30 a.m noon		
	Michele M	iccio, University of Salerno Alan Scaroni, The P	Pennsylvania State University				
FBC01-0073		Searching for Improved Characterisation of Ash Forming Matter in Biomass					
FBC01-0112		Biomass Mixing and Combustion in FBC					
FBC01-0113		Predicting the Ash Behavior of Different Fuels in Fluidized Bed Combustion					
FBC01	-0205	Thermal Treatment of Spent Potliners in an Internal Circulating Using a Natural Gas Burner	Fluidized Bed				
<u>704</u>	<u>Sustain</u>	able Fuels: Waste Fuel Fundamentals II	Southern Pacific CD	Tuesday	10:30 a.m noon		
	Richard W	/einstein, Parsons Corp. Cor van den Bleek,	Delft University of Technology				
FBC01	-0015	The Development of A Modular System to Burn Farm Animal Wa Generate Heat and Power	este to				
FBC01	-0131	Timely Detection of Agglomeration in Biomass Fired Fluidized 1	Beds				
FBC01	-0139	Simulation of Ash Particle Behaviour on Surfaces of Biomass Fi Bed Boilers - Combination of Computational Fluid Dynamics an Ash Analysis					
FBC01	-0219	High Temperature Bubbling Fluidized bed (HT-BFB) Combustic Coal, Refuse and Biomass	on Method for				
<u>705</u>		able Fuels: Sewage Sludge & Municipal Waste I	Southern Pacific CD	Monday	1:30 - 3:00 p.m.		
FBC01		eLallo, Parsons Corp.  Optimization of the Mercury Removal in a Sewage Sluge Inciner	ration				
FBC01		Co-Combustion of Dried Sewage Sludge and Coal/Wood in CFE for Factors Influencing Emissions					
FBC01	-0179	Development of Paper Sludge and Coal Co-Fired Bubbling Flui Boiler	dized Bed				
FBC01	-0194	RDF and Sludge Incineration in a 110 MW CFB Boiler: RVL Let	ızing				
<u>706</u>	Sustain	able Fuels: Sewage Sludge & Municipal Waste II	Southern Pacific CD	Monday	3:30 - 5:00 p.m.		
	Michael De	Michael DeLallo, Parsons Corp.					

**FBC01-0070** Fluidized Bed Combustion of Sewage Sludge

**FBC01-0108** Co-Combustion of Dried Sewage Sludge and Coal -- The Fate of Heavy Metals

**FBC01-0170** The Use of Waste Tyres in a Fluidised Bed Boiler to Generate Process Steam

## **Sustainable Fuels: Biomass**

Pavilion D

Tuesday 1:30 - 3:00 p.m.

Richard Weinstein, Parsons Corp. Joe Mei, U. S. Department of Energy

FBC01-0004 Co-Combustion of Lignite With Waste Wood in a Lab-Scale Fluidized Bed

**FBC01-0044** Co-Combustion of Coal and Biomass Wastes in Fluidised Bed

**FBC01-0101** *Utility Size Biofuel Fired CFB Boiler for Alholmens Kraft* 

**FBC01-0120** FB Combustion of Bark and Sawdust in Silica Sand Bed With Dolomite

Addition - A Case Study

## 710 Sustainable Fuels: Municipal Waste Fuels

Pavilion D

Wednesda 10:30 a.m. - noon

George Pukanic, U. S. Department of Energy Bo Leckner, Chalmers University of Technology

**FBC01-0017** Co-Firing Municipal Solid Waste With High Sulfur Coal in a Pilot FBC System

FBC01-0020 Technoeconomic Assessment of Fluidized Bed Combustors as Municipal Solid

Waste Incinerators

**FBC01-0030** Fluidized Bed Technology: Operation and Performance Testing of a Fluidized

Bed Power Plant Firing Municipal Refuse Derived Fuel in Ravenna, Italy

## 801 PFBC: Design & Cost Studies I

FBC01-0034

Southern Pacific AGB

George von Wedel, Lurgi Energie und Entsorgung GmbH

Tuesday 1:30 - 3:00 p.m.

Paul Weitzel, Babcock & Wilcox Company

Dynamic Modeling and Simulation of a Combined Cycle Process - The

Transient Behavior and Interactions of Pressurized Circulating Fluidized Bed,

Gas Turbine and Water-/Steam-Cycle

**FBC01-0039** *PFBC Steam Cycle Optimization* 

**FBC01-0048** The Gas Turbine in a Power Plant With Pressurized Circulating Fluidized-Bed

Combustion

**FBC01-0140** Thermomechanical Modeling of a Refractory Lining

802 PFBC: Design & Cost Studies II

Southern Pacific CD Tuesday 3:30 - 5:00 p.m.

Donald Bonk, U. S. Department of Energy

Robert Gross, U. S. Department of Energy

Second-Generation PFB Plant Performance with W501G Gas Turbine FBC01-0010

APFBC Repowering at Four Corners Station Uses Unique Approach FBC01-0053

FBC01-0054 APFBC Repowering Makes Sense for Existing Coal-Fired Units

FBC01-0055 Would APFBC Repowering of AES Greenidge Unit 4 Make Sense?

**PFBC:** Hot Gas Cleanup I 803

Southern Pacific AGB Monday 1:30 - 3:00 p.m.

Tom Lippert, Siemens-Westinghouse Power Corp. George von Wedel, Lurgi Energie und Entsorgung GmbH

CTF Development at Wakamatsu 71 MWe PFBC Combined Cycle Power Plant FBC01-0072

Commercial Readiness of Hot Gas Filtration for Pressurized Combustion FBC01-0083

FBC01-0183 Operating Experience with a Ceramic Channel-Flow Filter Downstream of a

Coal/Biomass Fueled Pressurized Bubbling Fluidized Bed Gasifier

804 **PFBC: Hot Gas Cleanup II** 

Southern Pacific AGB Wednesda 8:30 - 10:00 a.m.

Paul Weitzel, Babcock & Wilcox Company George von Wedel, Lurgi Energie und Entsorgung GmbH

FBC01-0024 Granular Filtration in a Fluidized Bed

Hot Gas Filter Status and Innovations for PFBC FBC01-0041

FBC01-0150 Opportunities for the Use of Barrier Filters in Industrial Applications

805 **PFBC: Operational Experiences** 

Southern Pacific AGB Tuesday 8:30 - 10:00 a.m.

John Byam, JB International Kay Heinschel, Air Products and Chemicals, Inc. FBC01-0089

Co-generation Plant Cottbus With ABB P200-Pressurized Fluidized Bed Combustion Experience Gained During Start Up and Trial Operations

Sulfur Dioxide Removal Performance of 250 MW PFBC at Osaki FBC01-0107

Development and Operation Results of Osaki 250 MW Commercial PFBC FBC01-0201

Plant (Osaki 1-1 PFBC Plant)

806 **PFBC: Components** Southern Pacific AGB Monday 3:30 - 5:00 p.m. Robert Gross, U. S. Department of Energy Segregation in an Inverted Loopseal for Use in Advanced Pressurized Fluid FBC01-0109 **Bed Applications** FBC01-0137 PFBC Freeboard Firing With Coal - Development of a CFD Based Design Tool Material Selection for the Super-Heater and Re-Heater Tubes on PFBC, Based FBC01-0191 on the Results of Laboratory Test and Ex-Serviced Materials Survey 807 **PFBC: Pilot Plants** Southern Pacific AGB Tuesday 10:30 a.m. - noon Shelton Ehrlich, Ehrlich Associates Doug Hajicek, University of North Dakota Commissioning of the Circulating PFBC in the Foster Wheeler Advanced FBC01-0037 PFBC Train at the PSDF Applied Research for a New Generation of Lignite-Fired Combined Cycle FBC01-0043 Power Plants Using Circulating Pressurized Fluidized Bed Combustion FBC01-0077 Commissioning of the JiaWang PFBC-CC Pilot Power Plant 808 **PFBC: Technical Advances** Southern Pacific AGB 10:30 a.m. - noon Monday Shelton Ehrlich, Ehrlich Associates Fred Glaser, U. S. Department of Energy Carbon Attrition from Australian Black Coals in Pressurized Fluidised Bed FBC01-0026 Combustion (PFBC) Development of an Ash Recirculation PFBC Technology FBC01-0071 FBC01-0181 Effects of Fluidization Mode Transition on Erosion of Immersed Tubes in Pressurized Fluidized Bed **Poster** 901 Pavilion A Monday & 6:00 - 8:00 p.m. FBC01-0062 Measurement of Hot Particle Mass Flux in Circulating Fluidized Bed Boilers Combustion and Fragmentation Characteristics of Korean Anthracite FBC01-0066 FBC01-0069 The Effect of Limestone Reactivation on the Attrition Behavior During Fluidized Bed Desulphurization

FBC01-0080	The Use of a New Model for Solid Mixing to Understand Temperature Profiles in PFBCs
FBC01-0110	BEST FUNDAMENTALS PAPER: Devolatilization of Pine Wood Chips in a Bubbling Fluidized Bed
FBC01-0121	The Coating Layers on Silica-Free Bed Particles During FB-Combustion
FBC01-0164	Organic Emissions From Coal-Tire Fluidized Bed Combustion
FBC01-0187	Unexpected CaCO3 Formation During Sulfur Capture With Calcined Limestone in the Presence of CO
FBC01-0197	Characterizing Biomass Reactivity for Fluidized Bed Combustion and Gasification: Measurements and Modeling
FBC01-0225	Kinetics of Combustion and Gasification of Ukrainian High-Ash Coal in Pressurized Fluidized Bed
FBC01-0227	BEST GASIFICATION PAPER: Advanced High-Termperature, High-Pressure Transport Reactor Gasification
FBC01-0228	BEST SUSTAINABLE FUELS PAPER: Timely Detection of Agglomeration in Biomass Fired Fluidized Beds
FBC01-0229	BEST PFBC PAPER: Development of an Ash Recirculation PFBC Technology